REMARKS

Claims 98-138 are pending in the above-captioned patent application following this amendment. Claims 98-138 have been rejected. The Applicants respectfully traverse the rejection of claims 98-138.

No new matter has been added by this amendment. Consideration of the Application is respectfully requested.

Rejection Under 35 U.S.C. § 103

Claims 98-138 were rejected under 35 U.S.C. § 103 as being unpatentable over Boismier et al (US 6,501,625) in view of Fraunhofer-Ges (DE 3844669). The Applicants have filed concurrently herewith a Supplemental Information Disclosure Statement that includes an English translation of Fraunhofer-Ges. All references to Fraunhofer-Ges are made relative to the translation provided herewith.

The Applicants respectfully traverse the rejection of the Patent Office on the grounds that the cited combination of references does not teach or suggest the features of at least some of the rejected claims. In particular, the Applicants submit that the Patent Office has included various material inaccuracies in its characterization of the cited references, as provided below. Additionally, the cited references do not provide the motivation or suggestion to combine the references. Moreover, the rejection is believed to be based upon impermissible hindsight. Finally, Fraunhofer-Ges is nonanalogous art, and is therefore believed to be an improper prior art reference. Consequently, the Applicants respectfully submit that the rejection by the Patent Office under 35 U.S.C. §103(a) is improper, and should be withdrawn.

Boismier et al. is directed toward a disk drive suspension that uses a multi-layered piezoelectric actuator 40, 162 to actively control gram load. The piezoelectric actuator 40, 162 is mounted to the load beam 24, 154 of the suspension using an adhesive. (Col. 4, lines 54-56; Figures 1, 2, 2A, 3 and 4). Boismier et al. does not teach or suggest mounting the piezoelectric actuator to an actuator arm of the disk drive. Further, Boismier et al. teaches that a voltage must be applied to the piezoelectric actuator 40, 162 to control gram load. (See, for example, Col. 5, lines 11-

12, 21-23, 31-32).

The Patent Office states in its rejection that "Boismier et al also shows in figure 1A a second adjuster 200 that adjusts the gram load that is applied to the slider 156, and wherein the head arm assembly 152 includes an arm beam 24, and the second adjuster 200 is incorporated as part of the arm beam 24." The Applicants respectfully submit that this reading of Boismier is incorrect. For example, the structure identified by reference character "24" is the load beam, not an arm beam. To the contrary, the arm beam is indicated in Figure 4 by reference character "157". The piezoelectric actuator 162 in Figure 4 (or any other Figure) is not incorporated as part of the arm beam or the actuator arm, but in every case is secured to the load beam 24, 154.

Further, the Patent Office states in its rejection that "'the gram load of the head suspension assembly 152 can be changed real-time with changing drive conditions' (e.g. ambient temperature). See lines 60-63 of column 5 and lines 2-4 of Boismier et al." The Applicants respectfully submit that parenthetical in the foregoing statement is unsupported by Boismier et al. At no time is the temperature of the drive ever mentioned in Boismier et al. In fact, Boismier et al. specifically identifies the types of "changing drive conditions" contemplated.

For instance, Boismier et al. indicates that periods of inactivity, vibrations and deflections represent changing drive conditions that are counteracted by changing the voltages that are applied to the piezoelectric actuator. (Col. 3, lines 41-51). Not only is Boismier et al. silent on using the piezoelectric actuator for changes in ambient temperature of the drive, but Boismier does not even identify temperature changes of a drive as impacting gram load or fly height. Stated another way, the problem of changing ambient temperature and its effect is never mentioned. Therefore, it is unreasonable to assume Boismier et al. is teaching that the piezoelectric actuator is being used for the purpose of solving an unacknowledged problem.

Fraunhofer-Ges is directed toward a device used with a rotating tooth wheel mounted on a substratum. Such tooth wheels may be utilized in the field of medical robotics. Specifically, "the intention would be to adduct miniaturized tools – driven by these devices – through the blood vessels to diseased organs." (Col. 1, lines 4-6).

Fraunhofer-Ges further provides that the "purpose of this invention is to further study an appropriate micromechanical device that would allow the drive mechanism to act directly on the tooth wheel." (Col. 1, lines 20-22). The invention includes two actuator arms that move linearly on a plane parallel to the surface of the substratum in order to turn the tooth wheel. (Col. 1, lines 23-27).

The rejection of the Patent Office states that "Fraunhofer-Ges also discloses an adjuster applying a gram load to the slider that at least partially depends on the temperature of the layers (i.e. non-electrically actuated)." The Applicants respectfully contend that this statement is not correct. For example, Fraunhofer-Ges clearly states that the thermal energy necessary for the operation may be supplied electrically using an electrical supply, or optically using a bundled light beam. (Col. 2, lines 13-18). It is well known that a bundled light beam similarly requires an electrical supply to increase the temperature of the adjuster. Thus, Fraunhofer-Ges depends upon actuation of the layers using an electrical means.

Moreover, the Patent Office states in its rejection that Fraunhofer-Ges suggests that the thickness of the first layer is different than the thickness of the second layer. Again, this assertion is unsupported. In fact, Fraunhofer-Ges states that the actuator arm (not analogous to the actuator arm in the present invention or in Boismier et al.) is made up of a T-shaped plate 2 of polysilicon approximately 0.5 micrometers thick and a metal layer 3 (e.g. gold) of approximately the same thickness. (Col. 2, lines 40-42; emphasis added). Fraunhofer-Ges does not teach or suggest using layers of different thicknesses.

Therefore, combining the electrically actuated piezoelectric actuator of Boismier et al. with the electrically actuated layers disclosed in Fraunhofer-Ges does not yield the invention disclosed in many of the rejected claims.

For example, claim 110 requires "a drive housing; a storage disk coupled to the drive housing; and a head arm assembly coupled to the drive housing, the head arm assembly including a non-electrically actuated adjuster and a slider coupled to the adjuster, the adjuster adjusting the gram load that is applied to the slider when the temperature of the adjuster changes." These features are not taught or suggested by

the cited combination of references. Thus, a rejection of claim 110 based on the cited references is unsupported and should be withdrawn. Because dependent claims 111-121 depend directly or indirectly from independent claim 110, a rejection of these claims is also believed to be unsupported.

Additionally, claim 131 is directed toward a method that requires the steps of "providing a head arm assembly including the slider and an non-electrically actuated adjuster; and adjusting the gram load that is applied to the slider with the adjuster as the temperature of the adjuster changes." These steps are not taught or suggested by the combination of the cited references. Thus, a rejection of claim 131 based on the cited references is unsupported and should be withdrawn. Because claims 132-138 depend directly or indirectly from independent claim 131, a rejection of these claims is also believed to be unsupported.

Further, the Patent Office provides in its rejection that "one of ordinary skill would have been motivated to having a first composition with a first material property, and the second layer having a second material property that is different than the first material property because the two sets of layers are art-recognized equivalents ...". The Appellant respectfully asserts that this assertion is unsupported by the cited references. Nowhere in either reference does it teach or suggest that in the art of disk drives and devices for adjusting gram load are the "two sets of layers art recognized equivalents." This is simply a conclusory statement that is not supported by the cited references or any other source provided by the Patent Office.

Additionally, claims 98-138 are patentable over the cited combination of references because there is no motivation to use the device used with a rotating tooth wheel that is taught by Fraunhofer-Ges in Boismier et al's disk drive. "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991; Emphasis added). In the present case, neither is found.

Even if the combination of references taught every element of the claimed invention, without a motivation to combine, a rejection based on a prima facie case of

obviousness has been held improper. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998). Further, the "mere fact that references *can* be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990; emphasis original and added). In the present case, the prior art does not clearly suggest the desirability of the resultant combination.

As provided above, Boismier et al. does not teach or suggest the importance or the desirability of using two different materials in its electrical actuator. In fact, Boismier et al. clearly delineates that the materials are to be the same. Thus, one skilled in the art reading Boismier et al. would not be motivated to seek an actuator that uses different materials to adjust gram load. Consequently, there is no motivation to combine the electrical actuator taught by Boismier et al. with the device for rotating a tooth wheel disclosed in Fraunhofer-Ges.

Moreover, assuming *arguendo* that one reading Boismier et al. were motivated to seek an actuator having two different materials with different material properties (despite no suggestion in this regard in the references), one would not be motivated to use the device disclosed in Fraunhofer-Ges for rotating a tooth wheel. For example, the actuator disclosed in Fraunhofer-Ges moves linearly along the substratum as illustrated in Figures 1b and 1c (see arrows). Fraunhofer-Ges states that movement of the free end of the actuator arm occurs along the surface in the direction of the fixed end. (Col. 3, lines 1-2). Thus, there would be no reasonable expectation for success in combining the cited references.

In summary, there is no suggestion in either of these references that they be combined in the manner suggested by the Patent Office. Absent such suggestion, a person skilled in the art who was looking for a solution to the problem of adjusting gram load in a disk drive (requiring movement perpendicular to the media) would hardly be disposed, on any objective basis, to consider a reference like Fraunhofer-Ges, which is not only unconcerned with adjusting gram load of a slider in a disk drive, but which shows absolutely no recognition of the problem of gram load changing with changing temperature in a disk drive. Therefore, the Appellant submits that it would not be proper

to combine the references in the manner suggested by the Patent Office.

Additionally, the "references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention ...". Hodosh v. Block Drug Co., Inc. 786 F.2d 1136, 1143, n. 5, 229 USPQ 182, 187, n. 5 (Fed. Cir. 1986). Moreover, the Federal Circuit stated, "[i]t is difficult but necessary that the decisionmaker forget what he or she has been taught ... about the claimed invention and cast the mind back to the time the invention was made (often as here many years), to occupy the mind of one skilled in the art who is presented only with the references, and who is normally guided by the then-accepted wisdom in the art." W.L. Gore & Associates, Inc. v. Garlock, Inc. 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Thus, the motivation to combine device for rotating a tooth wheel for use in medical robotics taught in Fraunhofer-Ges with the adjuster disclosed in Boismier et al. must be gleaned from the teachings of the cited references, which it is not. Therefore, combination of Boismier et al. and Fraunhofer-Ges constitutes impermissible hindsight, which is to be avoided when applying 35 U.S.C. 103(a).

Moreover, the Patent Office has relied on nonanalogous art in its rejection. The rejection by the Patent Office under 35 U.S.C. §103(a), which is based on Fraunhofer-Ges is improper because a skilled artisan in the field of suspension assemblies for a disk drive would not be expected to search nonanalogous art such as Fraunhofer-Ges, which pertains to an actuator for rotating a tooth wheel mounted on a substratum in a medical device using linear movement of the actuator. The Federal Circuit has stated that nonanalogous art is inadmissible evidence of whether or not an invention was obvious under 35 U.S.C. §103(a). In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). The determination of whether prior art is analogous involves determining (i) whether the reference is within the field of the invention's endeavor; or (ii) if the reference is not within the field of the endeavor, whether the field of the reference is reasonably pertinent to the particular problem. Id.

In In re Oetiker, the Applicant claimed an improvement in a hose clamp which differed from the prior art in the presence of a preassembly "hook" which maintained the preassembly condition of the clamp and disengaged automatically when the clamp was

tightened. In re Oetiker. The Board relied upon a reference which disclosed a hook and eye fastener for use in garments, reasoning that all hooking problems are analogous. In re Oetiker. The court held that the reference was not within the field of applicant's endeavor, and was not reasonably pertinent to the particular problem with which the inventor was concerned because it had not been shown that a person of ordinary skill, seeking to solve a problem of fastening a hose clamp, would reasonably be expected to look to fasteners for garments. In re Oetiker.

Here, the Appellant, seeking to solve the problem of reducing adjusting gram load of a slider in a disk drive, would not be expected to look to means for rotating tooth wheels in the field of medical robotics. Therefore, Fraunhofer-Ges is considered to be nonanalogous art, and is not properly cited as a reference to reject claims 98-138.

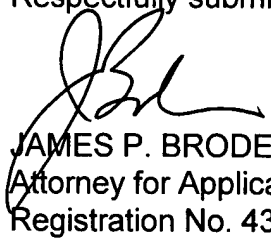
As a consequence, the Appellant submits that the rejection of claims 98-138 under 35 U.S.C. § 103(a) is improper and should be withdrawn, and that claims 98-138 be allowed.

CONCLUSION

In conclusion, the Applicants respectfully assert claims 98-138 are allowable for the reasons set forth herein. Accordingly, an early notice of allowance is respectfully requested. The Examiner is requested to call the undersigned at 858-487-4077 for any reason that would advance the instant application to issue.

Dated this the 21st day of June, 2005.

Respectfully submitted,



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